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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,507	03/08/2001	Aaron A. Rosenblatt	CDG-100US	5293

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EXAMINER

HRUSKOCI, PETER A

ART UNIT	PAPER NUMBER
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1724

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DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,507

Applicant(s)

ROSENBLATT ET AL.

Examiner

Peter A. Hruskoci

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Hurst. Griese et al. disclose (see col. 1 line 57 through col. 6 line 9) a method for treating water substantially as claimed. The claim differs from Griese et al. by reciting that a mixed chlorine/chlorine dioxide stream is used to treat the water. Hurst disclose (see col. 7 lines 39-50) that it is known in the art of water treatment to utilize both chlorine dioxide and elemental chlorine in the primary disinfection of raw water, in combination with a solids removal. It is submitted that the screening in Griese et al. and the solids removal in Hurst would remove THM precursors from the water. It would have been obvious to one skilled in the art to modify the method of Griese et al. by utilizing the recited mixed stream in view of the teachings of Hurst, to aid in disinfecting the water.

3. Claims 22-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Harp et al. Griese et al. disclose (see col. 1 line 57 through col. 6 line 9) a method for treating water substantially as claimed. The claims differ from

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Griese et al. by reciting that chlorine dioxide and monochloramine are introduced to cause preoxidation, and after solids removal, and chlorine and ammonia are introduced into the water to provide monochloramine, respectively. Harp et al. disclose (see col. 7 lines 1-30) that it is known in the art of water treatment to disinfect drinking water by adding ammonia and chlorine and forming monochloramines. It would have been obvious to one skilled in the art to modify the method of Griese et al. by introducing chlorine dioxide and monochloramine, and chlorine and ammonia into the water, respectively, in view of the teachings of Harp et al., to aid in disinfecting the water. The specific ratio of chlorine:ammonia utilized, and the introduction of chlorine dioxide and monochloramine into a side stream, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific water treated and results desired, absent a sufficient showing of unexpected results.

4. Claims 4-11, 18-21, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Hurst as above, and further in view of Harp et al. The claims differ from the references as applied above by reciting that ammonia is introduced into the water to provide monochloramine. Harp et al. disclose (see col. 7 lines 1-30) that it is known in the art of water treatment to disinfect drinking water by adding ammonia and chlorine and forming monochloramines. It would have been obvious to one skilled in the art to modify the method of Griese et al. by introducing

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ammonia into the water in view of the teachings of Harp et al., to aid in disinfecting the water. The specific ratio of chlorine:ammonia utilized, and the introduction of chlorine dioxide and monochloramine into a side stream, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific water treated and results desired, absent a sufficient showing of unexpected results.

5. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Glew et al. Griese et al. disclose (see col. 1 line 57 through col. 6 line 9) a method for treating water substantially as claimed. The claims differ from Griese et al. by reciting that the chlorine dioxide and chlorine are provided by separating a stream containing chlorine and chlorine dioxide. Glew et al. disclose (see col. 3 line 24 through col. 4 line 22) that it is known in the art to separate a stream from chlorine dioxide production into streams containing chlorine and chlorine dioxide, respectively. It would have been obvious to one skilled in the art to modify the method of Griese et al. by utilizing the recited separated chlorine and chlorine dioxide streams in view of the teachings of Glew et al., to aid in disinfecting the water.

6. Claims 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Glew et al. as above, and further in view of Harp et al. The claims differ from the references as applied above by reciting that ammonia is introduced into the water to provide monochloramine. Harp et al. disclose (see col. 7 lines 1-30) that

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it is known in the art of water treatment to disinfect drinking water by adding ammonia and chlorine and forming monochloramines. It would have been obvious to one skilled in the art to modify the references as applied above introducing ammonia into the water in view of the teachings of Harp et al., to aid in disinfecting the water. The specific ratio of chlorine:ammonia utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific water treated and results desired, absent a sufficient showing of unexpected results.

7. Claims 32, 34, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Glew et al. as above, and further in view of Rosenblatt et al. The claims differ from the references as applied above by reciting that a stream containing gaseous chlorine and chlorine dioxide is passed through a porous bed of sodium chlorite to yield a stream of chlorine dioxide. Rosenblatt et al. disclose (see col. 4 line 43 through col. 5 line 43) that it is known in the art to pass gaseous chlorine through a porous bed of sodium chlorite to aid in forming a stream chlorine dioxide. It is submitted that the stream passing through the bed in Rosenblatt et al. would include both chlorine and chlorine dioxide. It would have been obvious to one skilled in the art to modify the references as applied above by passing gaseous chlorine and chlorine dioxide through the recited bed in view of the teachings of Rosenblatt et al., to forming the chlorine dioxide stream.

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8. Claims 33, 35, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griese et al. in view of Glew et al. and Rosenblatt et al. as above, and further in view of Harp et al. The claims differ from the references as applied above by reciting that ammonia is introduced into the water to provide monochloramine. Harp et al. disclose (see col. 7 lines 1-30) that it is known in the art of water treatment to disinfect drinking water by adding ammonia and chlorine and forming monochloramines. It would have been obvious to one skilled in the art to modify the references as applied above introducing ammonia into the water in view of the teachings of Harp et al., to aid in disinfecting the water. The specific ratio of chlorine:ammonia utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific water treated and results desired, absent a sufficient showing of unexpected results.

9. Applicants allege that the application of chlorine-chlorine dioxide mixtures may achieve greater disinfection than the application of chlorine or chlorine dioxide alone, and the use of the recited mixtures of the instant method under some circumstances may be especially advantageous. Applicants have not provided sufficient comparative evidence with the prior art applied in the above rejections to support the above allegation.

10. Applicants argue that neither Griese et al. nor Hurst teach the use of a mixture of chlorine and chlorine dioxide in a primary treatment process as in the instant method. It

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is submitted that the water treated in Example 2 of Hurst would include a mixture of chlorine dioxide and chlorine, which appears to be contrary to the teachings of the Whites Handbook. Furthermore, it would appear that the dilute solution of chlorine dioxide added in Hurst would include at least a small amount of chlorine. It is noted that the mixtures recited in the instant claims fail to include specific weight or mole ratios of chlorine and chlorine dioxide to patentably distinguish over the teachings of Griese et al. and Hurst as applied above. It is further noted that the pretreatment and solids removal prior to disinfection in Griese et al. and Hurst would appear to remove THM precursors as in the instant method.

11. Applicant argues that the present invention begins with a chlorine-chlorine dioxide mixture, forms chloramines by reacting the chlorine with ammonia in the presence of chlorine dioxide, and utilizes a mixture of chloramines and chlorine dioxide, which is not suggested by the prior art. It is submitted that the teachings of Griese et al. show the addition of chlorine dioxide as a primary disinfectant and the addition of chlorine or chloramines as a residual disinfectant. It is submitted that Hurst teaches the use of chlorine dioxide and chlorine in combination for primary disinfection. Harp et al. was used to teach that it is known in the art to add ammonia and chlorine to drinking water for producing chloramines which are used as the primary disinfectant. It would have been obvious to one skilled in the art having the references before him to modify the

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combination of Griese et al. in view of Hurst by adding ammonia to the chlorine dioxide and chlorine treated water in view of the teachings of Harp, to aid in forming chloramines for primary or residual disinfection, absent a sufficient showing of unexpected results.

12. Applicants arguments concerning Glew et al. and Rosenblatt et al. are based on the propriety of the combinations of Griese et al., Hurst, and Harp et al.. These combinations are deemed properly applied for reasons stated above.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter A. Hruskoci whose telephone number is (703) 308-3839. The examiner can normally be reached on Monday through Friday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached on (703) 308-1972. The fax phone number for this Group is (703) 872-9310 (non-after finals) and 703-872-9311 after finals.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661 .


Peter A. Hruskoci
Primary Examiner
Art Unit 1724

P. Hruskoci
March 10, 2003